Beamline 9-BM / CMC-CAT

Scientific focus: Materials science

Scientific programs: EXAFS of complex materials, x-ray surface scattering, and general diffraction

Optics & Optical Performance
- white beam slits (APS design L3-20)
- double-crystal, water-cooled Si monochromator
- toroidal mirror
- monochromatic slits (APS design L4)

Experiment Stations
9-BM-A
- white beam first optics enclosure

9-BM-B
- monochromatic beam station
- EXAFS

9-BM-C
- monochromatic beam station
- surface diffraction
- general diffraction

Detectors
- Smart 1500 CCD
- scintillation counters

Beamline Controls and Data Acquisition
- Sun UNIX running EPICS with VME, SPEC

Beamline Support Equipment/Facilities
- UHV surface apparatus
- EXAFS instrumentation

Bending Magnet Source Characteristics (nominal)

source	APS bending magnet
critical energy	19.51 keV
on-axis peak brilliance at 16.3 keV	2.9×10^{15} ph/sec/mrad²/mm²/0.1%bw
on-axis peak angular flux at 16.3 keV	9.6×10^{13} ph/sec/mrad²/0.1%bw
on-axis peak horizontal angular flux at 5.6 keV	1.6×10^{13} ph/sec/mradh/0.1%bw
source size at critical energy Σ_x Σ_y	 145 μm 36 μm
source divergence at critical energy $\Sigma_{x'}$ $\Sigma_{y'}$	 6 mrad 47 μrad